

Draft Study on Renewable Energy Requirements
Prepared Pursuant to Section 13a of Public Act 159

Staff Draft

August 30, 2011

I. Introduction

Section 13a of Act 159 requires that the Public Service Board (“Board”) submit to the Vermont legislature by October 1, 2011, a study of renewable energy requirements in Vermont. The act requires that the Board propose both a renewable portfolio standard (“RPS”) and a revised Sustainably Priced Energy Enterprise Development (“SPEED”) program and then evaluate which option Vermont should adopt. In addition, the Board is required to evaluate specific issues identified by the statute.¹

The following is a draft report prepared by Board staff. This document does not reflect the views of the Public Service Board and is intended to be a strawman document designed to elicit focused comments by interested parties.

The Board received capacity assistance from Clean Energy States Alliance and Sustainable Energy Advantage (“CESA/SEA”) who prepared the report *Analysis of Renewable Policy Options for Vermont*.² The CESA/SEA report sets forth various renewable policy design options and evaluates the advantages and disadvantages of the design options. In addition, the CESA/SEA report includes economic modeling of various policy scenarios. The recommendations in this draft staff report are informed by the CESA/SEA report and the full CESA/SEA report is included as Appendix 2 of this draft report.

In evaluating any decision to impose renewable energy requirements, it is important to recognize that Vermont’s electricity portfolio already consists of a relatively high proportion of renewable energy sources. Additionally, if the goal of a renewable energy requirement is to reduce greenhouse gases or otherwise provide environmental benefits, it should be noted that the

¹The text of Section 13a is included as Appendix 1 of this report.

²Funding for the CESA/SEA report was provided by the National Association of Regulatory Utility Commissioners through a program sponsored by the U.S. Department of Energy.

electricity sector in Vermont provides only a portion of the total greenhouse gas emissions, with more emissions resulting from the transportation and heating sectors. In addition, Board staff are aware that the program proposed below will impose costs at a time when there are other significant costs for Vermonters. Staff specifically proposed a program design that would increase costs gradually over a twenty-year period, with the majority of the costs likely to be incurred in the later years. Staff request that interested parties specifically comment on the overall costs of the proposed program and how the Board should balance the benefits of the program with these costs.

Notwithstanding the above comments, the legislature has directed the Board to specifically address a renewable energy requirement for Vermont's electric sector. Given this specific directive, staff recommend that any renewable requirement in Vermont, regardless of whether such a requirement takes the form of a revised SPEED program or an RPS, achieve the following three objectives:

- (1) Maintain the existing level of renewable resources, regardless of the vintage of those resources;
- (2) Encourage the development of the most cost-effective new renewable resources, regardless of location; and
- (3) Encourage the development of in-state renewable resources to the extent permissible under federal law.

In particular, staff recommend that Vermont adopt an RPS with an overall renewable energy requirement of 75%, with 40% of this requirement derived from maintenance of the state's existing percentage of renewable resources, 30% of the requirement derived from new renewable resources constructed after 2005, and 5% of the requirement derived from in-state renewable distributed generation.

Staff's draft proposal for an RPS and a revised SPEED program are included in Sections IV and V of this draft report.

II. Background

Vermont's Existing Renewable Energy Requirements

The Vermont legislature created the Sustainably Priced Energy Enterprise Development (“SPEED”) program in 2005. The SPEED program requires the Vermont utilities, collectively, to meet at least 5% of 2005 load, and incremental load growth from January 1, 2005, to December 31, 2012, up to ten percent of 2005 load, through contracts with renewable resources that come on-line after January 1, 2005.³ The same legislation created an RPS, codified in Section 8004, that would become effective only if the requirements of the SPEED program were not met. The Board must determine, by January 1, 2013, whether the SPEED requirement has been met.

An important component of the SPEED program is that utilities do not need to retire renewable energy credits (“RECs”)⁴ to comply with the program. In other words, a utility can enter into a long-term contract with a renewable developer to buy a certain amount of energy and RECs from a new renewable project. The contract for the energy will count towards Vermont’s SPEED requirement and the utility is allowed to sell the RECs associated with that energy to a utility in a state with an RPS that requires the utility to retire the RECs. Accordingly, under SPEED, each MWh of new renewable energy is counted twice, once toward SPEED and once for the RPS program in another state. Consequently, there cannot be any claim that the number of MWhs enrolled in the SPEED program constitutes new renewable generation. While the SPEED program’s requirement that utilities enter into contracts with developers provides greater financial certainty for those developers than a sale of RECs alone, because RECs are allowed to be sold under the program, it is unclear whether the SPEED program actually promotes new renewable generation.

³ Pursuant to Section 8005(d)(1) and (3), the contracts may be with in-state or out-of-state facilities. Qualifying SPEED resources are defined as “contracts for in-state resources in the SPEED program established under section 8005 of this title that meet the definition of new renewable energy under this section, whether or not renewable energy credits are attached.” Section 8002(5).

⁴ Section III.F of this draft report includes a discussion of RECs.

In 2009, Act 45⁵ added the standard-offer program to the SPEED program. This program requires the Board to establish cost-based prices for renewable technologies with a capacity of 2.2 MW or less. Act 45 imposed a 50 MW ceiling on program participation. At this time the program is fully subscribed and more than 150 projects, representing approximately 142 MW of capacity, are on a waiting list to enter the program.⁶

Where the term “SPEED program” is used generally in this report, it does not refer to the standard-offer program, unless otherwise noted.

Renewable Portfolio Standards

Act 159 requires that the Board specifically examine whether Vermont should adopt an RPS. The CESA/SEA Report provides a more detailed explanation of RPS, but in summary an RPS is a mechanism that requires a specific portion of the electricity provided by an electric utility to be derived from renewable resources. RPSs have been implemented in 29 states in the U.S., including all of the New England states except Vermont. Typically, the compliance requirements are increased over a period of several years in order to provide sufficient time for the necessary renewable resources to be built, while also spreading the cost of compliance over a number of years to avoid rate shock. Many RPS programs, and all of the RPS programs in New England, rely on Renewable Energy Credits (“RECs”) to demonstrate compliance. Under this model, one REC is assigned to each MWh of energy produced from a renewable resource; the electricity and RECs can be sold as separate commodities, and typically a utility only needs to purchase and retire RECs in order to comply with an RPS.

Characteristics of Energy Supplies

Renewable energy requirements have implications for electric utility planning due to the particular characteristics of some renewable technologies. In particular, wind and solar generation, the most abundant renewable energy sources available in New England, are intermittent resources — that is they generate power only when the resource is available — and

⁵The Vermont Energy Act of 2009, Public Act 45 (2009 Vt., Bien. Sess.).

⁶See “applications not yet processed”, located at vermontspeed.com.

can pose challenges for system operation at high penetration levels. Even within the category of intermittent generation, there are differences between technologies: solar generation in general has a lower capacity factor⁷ and is more expensive than wind, but the output from solar generation generally coincides with peak load. Conversely, wind generation is generally less expensive than solar, but has a lower coincidence with peak load.

Other renewable technologies, such as landfill gas and farm methane projects, are dispatchable and can be relied upon to produce generation when called upon. However, the available resources and locations for these technologies are limited, particularly with respect to landfill gas. Stored hydroelectric resources can be dispatchable but impose greater environmental costs than run-of-river hydroelectric (“hydro”) facilities, which produce electricity only during periods of high water, typically in the spring when load is low. Woody biomass is also dispatchable, but emits air pollutants and the price of fuel can vary depending on conditions during the logging season and transportation costs.

Of course, any generation type has advantages and disadvantages. The primary advantage of most renewable technologies is the ability to generate electricity without emitting air pollution, including greenhouse gases. Table 1, below, summarizes the advantages and disadvantages of different renewable technologies.

Table 1 - Overview of Renewable Technologies

Technology	Advantages	Disadvantages
Farm methane	utilizes existing methane source provides water quality benefits and economic benefits to farmers provides baseload power	typically not located near load and requires upgrades to the distribution system
Solar	ease of siting, coincidence with peak loads	high cost, intermittent nature
wind	low cost	controversial to site,

⁷Capacity factor is the ratio of the electrical energy produced by a generating unit for the period of time considered to the electrical energy that could have been produced at continuous full power operation during the same period. Department of Public Service Utility Facts at G-1.

		intermittent nature
landfill gas	utilizes existing methane source	limited resources available
hydroelectric	In some cases, provides baseload power	limited sites; many sites limited to run-of-river production which is coincident with low load.

Utility Procurement

Utilities generally obtain electricity through the following three options. First, a utility can choose to construct, own and operate a generation resource. Many of Vermont's utilities have owned hydroelectric units for several decades.

Second, utilities can enter into contracts with owners of generation units to purchase the attributes of the facility, including energy, capacity, and RECs. Typically generation owners prefer to sell bundled contracts in which utilities purchase all of the attributes for one price — the price can either be a fixed price which may escalate by a certain percentage over the term of the contract or the price may be set as a percentage of the regional market price.⁸ The majority of the long-term contracts that Vermont utilities have entered into with renewable generators are bundled contracts and it is Board staff's understanding that bundled contracts can result in lower overall prices for the attributes collectively than if each attribute was purchased separately.

Finally, utilities can purchase energy, capacity, RECs, and ancillary services in the regional electricity market.

Development of this Report

Insert procedural history - workshops, hiring CESA/SEA, etc.

⁸In the last few years, the price term for the majority of power purchase agreements reviewed by Board staff has been set a fixed price which escalates over the term of the contract, consistent with the statutory goal encouraging stably priced contracts. See Section 8001(3).

III. Statutory Considerations

III.A An evaluation of whether or not Vermont should adopt an RPS to amend or replace the RPS adopted in 2005 or, in lieu of adopting such an RPS, should adopt revised goals and requirements for the SPEED program. (Section 13a(b)(2)(A))

The final determination as to whether this study should recommend that Vermont adopt and RPS or amended SPEED program will be made by the Board after receiving input from participants. However, the following is presented as a straw recommendation.

Board staff recommend that regardless of whether the legislature adopts an RPS or a revised SPEED program, that Vermont adopt a comprehensive renewable energy policy that addresses new renewable generation, small-scale, in-state generation, and the Vermont utilities' existing level of renewable resources. Under this approach, there should be mechanisms for achieving the following three objectives:

- (1) Maintain the existing level of renewable resources, regardless of the vintage of those resources;
- (2) Encourage the development of the most cost-effective new renewable resources, regardless of location; and
- (3) Encourage the development of in-state renewable resources to the extent permissible under federal law.

For the reasons set forth in this report, Board staff believe that a program which utilizes an RPS to incentivize new renewable generation should be combined with mechanisms for obtaining small-scale, in-state distributed generation and for ensuring that the existing proportion of renewable energy be maintained. The complete proposal is set forth in Section IV of this draft report, entitled Proposal for a Renewable Portfolio Standard. In addition, in accordance with the statutory requirements, Section V of this draft report includes a proposal for a revised SPEED program.

III.B An evaluation of whether the voluntary goals and aspects of the SPEED program should be made mandatory. (Section 13a(b)(2)(B))

Section III.A, above, describes Board staff's overall recommendation as to whether a

revised SPEED program or an RPS is more appropriate for Vermont. However, to address this study requirement, staff present the following analysis.

Section 8005(d)(2) states: “A state goal is to assure that 20 percent of total statewide electric retail sales before July 1, 2017 shall be generated by SPEED resources.” This goal can be met through resources located either in-state or outside of Vermont. To the extent that the legislature decides to establish voluntary goals, it should consider the following factors.

The benefits of voluntary goals are greater flexibility for utilities and potentially lower costs for the program. However, as there are no explicit incentives or penalties associated with this goal, there is no certainty as to whether the goal will be met. In addition, voluntary goals do not establish clear signals for utilities or regulators. For example, if the 20% goal is voluntary, it is unclear what regulators may determine if a utility decides to enter into a contract for a renewable resource and the contract price is significantly above forecasted market prices. One view is that the existence of a voluntary goal provides utilities broader discretion to enter into contracts with renewable resources that may be higher-priced than alternative power sources, and the Board and Department of Public Service (“DPS”) would take the voluntary goal into account when determining whether such higher-priced contracts are reasonable.

Given the fact that the SPEED program does not provide certainty regarding the extent to which new renewable resources are developed in the region as a result of the program, there is little benefit to having a mandatory requirement. Accordingly, if the legislature decides to continue the SPEED program, it should make the renewable goals voluntary and also include statutory language regarding the weight that such a goal should be given when the Board and DPS review contracts for renewable resources.

III.C An evaluation of the economic and environmental benefits and cost of adopting an RPS at each of the following percentages of Vermont's electricity supply portfolio: 25, 50, 75, and 100 percent. The board shall also perform the same evaluation with respect to the imposition of mandatory SPEED goals at the same portfolio percentages (Section 13a(b)(2)(C))

Through a collaborative process including input from stakeholders and the Board's consultants, CESA/SEA, economic modeling scenarios were developed in order to perform the

prescribed analyses. Detailed descriptions of each modeled scenario, as well as the modeling results, can be found in Section I of the CESA/SEA report. In summary, the scenarios include an RPS or SPEED program at 25, 50, 75 or 100%, with the assumption that there will be either a continuation of the standard-offer program or, in its place, a similar distributed generation ("DG") tier. This standard-offer or DG tier would comprise 20% of any new renewables required to meet the state standard. There are also sensitivities for whether or not hydro facilities with capacity greater than 200 MW are eligible for either an RPS or SPEED. It is assumed that the policy would be effective beginning in 2013, and would have a target date of 2032. Each of these scenarios was compared to a Reference Case, which includes the current statutory requirement, pursuant to Section 8005(d)(1), that requires Vermont to have procured enough SPEED resources to meet at least 5% of 2005 total statewide electric retail sales, coupled with the current standard-offer program, pursuant to 30 V.S.A. § 8005(b)(2). The results show the difference in both economic costs and environmental (carbon emissions) benefits between the Reference Case and each scenario.

It is not necessary to reiterate the results of each of the 15 modeled scenarios here. The results of the analyses are discussed in detail in the CESA/SEA report, and are most readily understood by observing the various Tables in that report. Table 3, copied below, shows that the costs associated with both an RPS and mandatory SPEED goals at all but the 100% level, while not inconsequential, are reasonable in light of Vermont's goals.

SCENARIOS TABLE 3: Summary of RPS/SPEED Policy Cost and Environmental Impact				
Scenario	Policy Cost Above Reference Case (NPV M\$)	% Cost Increase Over Reference Case	Billed Rate Impact Above Reference Case (30-Yr Levelized cents/kWh)	CO2 Impact vs. Reference Case (tons)
SPEED 25%; No large hydro DG 20% = Standard Offer	\$2	0%	0.00	0
RPS 50%; Large hydro DG 20% = RPS tier	\$36	1%	0.03	(10,020,207)

RPS 25%; No large hydro DG 20% = RPS tier	\$52	1%	0.05	(7,576,177)
SPEED 50%; No large hydro DG 20% = Standard Offer	\$56	1%	0.06	0
RPS 50%; Large hydro DG 20% = RPS tier	\$80	2%	0.07	(10,020,207)
SPEED 75%; No large hydro DG 20% = Standard Offer	\$135	3%	0.13	23,118
RPS 50%; No large hydro DG 10% = RPS tier	\$175	4%	0.17	(15,908,809)
RPS 75%; Large hydro DG 20% = RPS tier	\$205	4%	0.19	(18,391,641)
RPS 50%; No large hydro DG 20% = RPS tier	\$222	4%	0.21	(15,905,990)
RPS 75%; Large hydro DG 20% = Standard Offer	\$294	6%	0.27	(18,391,641)
RPS 50%; No large hydro DG 20% = Standard Offer	\$326	7%	0.30	(15,905,990)
RPS 75%; No large hydro DG 20% = RPS tier	\$491	10%	0.46	(25,697,706)
RPS 75%; No large hydro DG 20% = Standard Offer	\$612	12%	0.57	(25,697,706)
SPEED 100%; No large hydro DG 20% = Standard Offer	\$1,441	29%	1.29	6,812,166
RPS 100%; No large hydro DG 20% = RPS tier	\$2,008	41%	1.81	(28,916,358)

For illustrative purposes, a discussion of the results of the various scenarios at the 75% level follows. An RPS that meets 75% of Vermont's electricity supply portfolio (inclusive of large hydro facilities), with 20% of the new renewables coming from a revised standard-offer program, would cost approximately \$294 million more than the reference case over a 30-year time period, representing a 6% increase. Such a standard would be expected to reduce carbon

dioxide emissions by approximately 18.4 million more tons than the reference case.

Alternatively, an RPS (inclusive of large hydro) at the 75% level that utilizes a DG tier in place of the revised standard-offer program would cost approximately \$205 million more than the reference case, representing a 4% increase. The comparison between the standard-offer and DG tier highlights how setting prices as in the standard-offer scenario, rather than using an auction or market-based pricing mechanism, can unnecessarily increase program costs.

A similar evaluation, analyzing a modified SPEED program at 75% (exclusive of large hydro) in which 20% of the new renewables come from a revised standard-offer program, shows that the program would cost approximately \$135 million more than the reference case, representing a 3% increase. In this scenario, carbon dioxide emissions would be expected to *increase* relative to the reference case by as much as 23 thousand pounds. The reason for the expected increase is that the environmental benefits of the resources have been sold along with the RECs in the SPEED scenario and therefore the model assumes that there is no increase in new renewable energy in the region due to the SPEED program. Therefore, the purchaser of the RECs will meet their RPS requirement through the purchased RECs, yet meet their energy requirement through the purchase of electricity typical of the New England system mix. The assumed New England system mix emissions profile is 750 pounds per MWh.

While it is without doubt that there are economic costs associated with an RPS or mandatory SPEED program, there are also benefits in the form of in-state jobs that result from some, but not all, of the scenarios. As discussed in the following section, if large hydro facilities with capacities in excess of 200 MW are eligible new renewable resources, it is extremely unlikely that any new non-hydro renewable resources would be built in Vermont or elsewhere to satisfy a Vermont main tier requirement, and therefore would result in no new in-state jobs. Conversely, when large hydro facilities are ineligible, Vermont-based projects represent viable opportunities for compliance, and would likely create in-state jobs. It is most likely that in-state

job creation would come from the inclusion of net metering in the DG tier and from the expansion and revision of the standard-offer program.⁹

Another economic benefit resulting from increases in new renewable resources is the decrease in wholesale electricity market prices through price suppression. A commissioned renewable resource is generally considered a "must run" facility, and is able to bid into the wholesale market as price-taker, thus displacing the marginal, expensive generating unit. As renewable resources increasingly penetrate the market, lower-priced units then become the marginal unit. In the previously discussed RPS example at 75% (inclusive of large hydro), this price-suppression benefit is approximated to have a net present value of \$24.7 million. In other words, the price-suppression benefit could offset roughly 12% of the cost of that scenario to Vermonters. However, because Vermont participates in a regional market, the price-suppression benefits would extend beyond Vermont to all New England ratepayers, resulting in approximately \$432 million in price-suppression benefits to the region as a result of a Vermont RPS.

III.D An evaluation of the effect on the development of in-state renewable energy resources that may occur if an RPS is adopted and, under such an RPS, out-of-state resources with capacities in excess of 200 MW are considered renewable. The Board shall also perform the same evaluation with respect to the imposition of mandatory SPEED goals. Such evaluations shall take into account each of the percentages discussed under subdivision (2)(C) of this subsection. (Section 13a(b)(2)(D))

To the extent that large renewable resources are allowed to participate in a Vermont renewable requirement, these resources would, depending on program design, decrease the number of in-state resources that are developed as a result of the requirement. This will result in less economic development within Vermont, but will also provide greater flexibility for utilities to obtain the least cost resources to comply with a renewable energy requirement.

⁹ A comprehensive job-creation analysis was beyond the scope of the consultant's contract. The Department of Public Service report, *Economic Impacts of Vermont Feed In Tariffs*, indicates that the current SPEED standard-offer program would result in a modest positive job result. It appears reasonable to conclude that an expanded and revised SPEED standard-offer program, or in its place a less expensive DG program, would result in further Vermont job creation.

It is important to keep in mind that there are constitutional commerce clause issues associated with providing preference to in-state generation. Section H.3 of the CESA/SEA report provides a summary of this issue, but in brief, the commerce clause of the U.S. constitution prohibits states from acting in a manner that restricts interstate commerce, including by providing preferences to local businesses. However, a state may implement a policy that is narrowly tailored and that does not on its face discriminate against out-of-state businesses. For example, distributed generation can provide benefits to an electric distribution grid and must be interconnected to the distribution grid, in other words be located within Vermont, in order to provide such benefits. Accordingly, a carefully crafted policy mechanism that provides incentives for small, distributed resources that are connected to Vermont's electric distribution system could survive commerce clause challenges.

As discussed in Section III.F, below, staff propose a renewable energy requirement that would require that a certain percentage of the new renewable energy requirement be met through small-scale, in-state renewable distributed generation. Under this policy, small-scale, in-state resources would not compete economically with large renewable resources but would instead be a required portion of the portfolio. Section F of the CESA/SEA report addressed the effect of large regional resources on the development of in-state renewable energy.

III.E Analysis of RPS statutes and rules that have been adopted in other jurisdictions and their strengths and weaknesses, and a discussion of how a Vermont RPS, and in lieu of an RPS, revised SPEED goals and requirements might integrate with such statutes and rules. (Section 13a(b)(2)(E))

There are currently 29 states that have adopted some form of RPS, and no two states are the same in terms of policy design, applicability or compliance. Board staff believe that it will be important that any renewable requirement be able integrate with some of the same compliance mechanisms that have been adopted in the New England states while drawing on the broader experiences of the entire 29 states.

Below is a summary of the RPS policies in the New England states as well as New York. One theme that these policies have in common is that they all have multiple tiers or classes of renewable resources, usually including at least one tier for new renewable resources and another

for existing renewable resources. Several states have separate tiers or classes for specific technology categories or for customer-sited resources.

Connecticut - Connecticut's RPS began in 2006 and includes three tiers: Class I for new renewable projects, Class II for existing projects, and Class III for customer-sited CHP, electricity savings from conservation and load management, and waste heat recovery from facilities. By 2020, the state targets 20% of load with Class I resources, 3% with Class II resources, and 4% with Class III resources. Connecticut has also enacted a program called Project 150, which requires the state's two distribution utilities to enter into long-term electricity purchase agreements to obtain at least 150 MW of Class I (new) renewable energy. The RPS only applies to the IOUs, although municipal utilities must develop their own RPS.

Maine - Maine's most current RPS began in 2008 and includes two tiers - Class I for new renewable resources pursuant to a 2007 law, and Class II for existing resources that were developed for a previous RPS that called for 30% of sales by 2000. Except for wind, individual unit capacity is limited to 100 MW. Maine has adopted three wind-energy development goals: 2000 MW of installed capacity by 2015, 3000 MW of installed capacity by 2020, including 300 MW from facilities located in coastal waters, and 8000 MW by 2030, including 5000 MW from facilities in coastal waters or offshore. Maine has adopted a credit multiplier (1.5) for community-based resources of 10 MW or less, limited to 50 MW in aggregate, with 10 MW reserved for projects of 100 kW or less. New renewable resources are defined as those commissioned after September 1, 2005. The state targets 10% of load with Class I resources by 2017.

Massachusetts - Massachusetts' RPS began in 2004 for Class I new renewable resources, 2009 for Class II existing renewable and Class III existing waste-to-energy resources, and 2010 for Class IV in-state, customer-sited resources with a nameplate capacity of less than 6 MW. New renewable resources are defined as those commissioned after December 31, 1997. The Massachusetts RPS applies to all utilities except for municipal electric utilities. The state targets

19% of load with Class I resources by 2020, and has a goal of 25% of 2020 load to be served by demand-side resources.

New Hampshire - The New Hampshire RPS began in 2009 for Class I new renewable resources, 2010 for Class II new solar resources, 2008 for Class III existing biomass/methane resources, and Class IV existing small hydro resources. New renewable resources are defined as those commissioned after January 1, 2006. Municipal utilities are exempt from RPS compliance. The state targets 16% of load with Class I resources by 2025, 0.3% with Class II resources, 6.5% with Class III resources, and 1% with Class IV resources.

Rhode Island - The Rhode Island RPS began in 2007 and includes two tiers: Class I for new renewable resources and Class II for existing resources. New renewable resources are defined as those commissioned after December 31, 1997. In addition, electric distribution utilities are required to enter into long-term contracts for at least 90 MW of new generating capacity by 2013, including 3 MW of solar located in the state, and must purchase energy, capacity, and attributes from these projects. While this is a separate policy mechanism, an electric utility may use the RECs from these contracted projects to satisfy the RPS requirement, if approved by the PUC. The state has targets of 14% of load with Class I resources by 2019 and 2% with Class II resources.

As can be seen from the above summary of the policies enacted by states in New England, there are significant differences in the arrangement of the programs and, in particular, the date by which renewable resources are considered to be “new” for the purposes of RPS compliance. However, each of the states uses RECs to demonstrate compliance with its RPS, and utilities are largely required to obtain the RECs through their own procurement process.

New York has a very different RPS program that employs a central procurement model, in which funds are collected through a systems benefits charge and the money collected is used to purchase renewable energy through an auction mechanism. Additional information on the New York RPS is provided below.

New York - The New York RPS began in 2006 for Class I new renewable resources, 2007 for Class II customer-sited renewable resources, and 2003 for Class III existing resources. New renewable resources are defined as those commissioned after January 1, 2003. Customer-sited resources do not have a specific capacity limitation, but must be used primarily to meet on-site load. Municipal utilities, including the Long Island Power Authority (LIPA) and New York Power Authority (NYPA), are exempt from RPS monetary collections, but are encouraged to meet the standard nonetheless. The state targets roughly 7.5% of load with Class I resources by 2015, 0.5% with Class II resources, and 20.7% with Class III resources.

The CESA/SEA report includes a comprehensive treatment of RPS best practices based on lessons learned from the 29 existing state standards, including certain policy strengths and weaknesses. Board staff recommend that the following principles be emulated in a Vermont renewable requirement.

Program Design Considerations

- In order for an RPS to be successful, the goals (environmental, economic, technological or otherwise) of the RPS must be stated explicitly from the outset. Policymakers should then refer back to these goals for each policy decision to ensure that it is aimed at a specific goal.
- There are limitations to what an RPS can accomplish efficiently. An RPS should not be used in isolation, but rather, should be used to accomplish what it can efficiently, and allow other policies and programs to complement.
- An RPS should be simple yet able to achieve specific goals, should be able to achieve multiple objectives while maximizing cost-effectiveness, and should be predictable and stable while allowing for change in response to market conditions.
- An RPS should be designed in a manner that will assist renewable energy developers in securing financing through long-term contracting for project outputs. Financiers may be hesitant to invest in renewable energy projects without long-term contracts for the power and/or the RECs.

- An RPS should apply to all load-serving entities in Vermont: investor-owned, municipals, and cooperatives.
- Several jurisdictions have implemented reverse auctions to procure power supplies, including new renewable energy. In a reverse auction, the purchaser, in this case a government agency such as the Board, the SPEED Facilitator, or the DPS first specifies the product to be procured. Next, unqualified bidders are screened out of the auction. Finally, the auction is conducted with bidders competing on price. This policy mechanism has appeal as it ensures that renewable resources are procured at the least cost. Due to the potential for a large increase in administrative burden, this mechanism may not be appropriate for the entire Vermont portfolio, but rather, could be used for a smaller subset of the portfolio. If the SPEED standard-offer program were continued and enlarged, or replaced with a distributed generation tier in an RPS, the reverse auction mechanism appears to be appropriate for setting prices, and can be designed to be compatible with recent FERC determinations. It would be important that eligible resource definitions be consistent with those of the other New England states.

Program Compliance Considerations

- Renewable Energy Certificates ("RECs") provide compliance flexibility, provide a tradeable, fungible commodity that accurately records what was produced, and can reduce the cost of compliance. Because each of the other New England states has an RPS, and each require the use of RECs to demonstrate RPS compliance, a Vermont RPS should consider the use of RECs tracked on the NEPOOL GIS. In order to keep compliance costs low, Vermont should consider resource eligibility definitions, compliance mechanisms and periods, and other REC features that are as similar to those of the other New England states as possible.
- The cost of compliance with an RPS should be limited by adopting one or more mechanisms, including alternative compliance payments ("ACPs"), rate caps, or REC banking. Because several New England states have adopted similar

mechanisms to control the cost of compliance, a Vermont RPS should incorporate mechanisms that are consistent with those of the other New England states. For instance, it would make sense to adopt an ACP at the same level as other states, and to allow RECs to be banked for the same number of years as in the other states.

- RPS compliance costs, when prudently incurred, should generally be recoverable in electricity rates.

III.F Consideration of whether or not Vermont should adopt a definition of renewable resources that includes tiers or classes and a recommended proposal for such a definition. (Section 13a(b)(2)(F))

There are at least three possible types of renewable energy resources that a state policy can encourage: existing renewable resources, new renewable resources, and small in-state or technology-specific renewable resources. In order to encourage the development of the different types of resources, it may be necessary to employ different policies.

The existing SPEED program is concerned only with new renewable resources and does not provide any incentives for utilities to maintain the existing renewable resources. Under this approach, the SPEED requirements could be met, but the percentage of renewable energy in the overall state energy portfolio could decline over time. In order to address this issue, many RPS programs include a new renewable tier, which is met through higher value RECs (often called Class 1 RECs), and an existing renewable tier, which is met with lower value RECs (often called Class 2 RECs).

Below, we address the policies that could be employed to address each of the three types of resources. Board staff recommend that Vermont adopt a renewable energy requirement that requires utilities to retire RECs associated with new renewable resources, and that only a percentage of the new renewable energy be required to come from new in-state distributed generation, as described below.

New Renewable Generation (Class I)

Typically, the primary goal of a renewable energy requirements is to encourage the development of new renewable energy. Under most forms of an RPS, the utility is required to purchase and retire RECs to comply with the renewable requirement, but is not required to purchase the underlying energy. In contrast, the SPEED program requires utilities to enter into contracts for the energy, but allows utilities to sell the RECs.

Section III.D, above, discusses the relative advantages and disadvantages of requiring that the new renewable generation requirement be met through in-state generation. Some states with an RPS have specific carve outs for in-state generation, but generally, the majority of the new renewable requirement can be met through RECs from renewable facilities located within the region.

Under this new renewable, or Class I tier, resources would be eligible if they were renewable facilities that were commissioned no earlier than January 1, 2005, and had the ability to sell into the ISO-NE market.

New in-state renewable generation (Class II)

In-state distributed generation can provide several benefits to Vermont, including the construction jobs associated with developing the facility and the addition of a generation resource to strengthen the distribution grid.¹⁰ Currently, Vermont has two programs that encourage distributed generation, net metering and the standard-offer program.

A policy that provides an incentive for new, in-state renewable generation should recognize that the costs of such resources will likely be higher than larger, new renewable resources located in areas with more resources. However, the policy should also attempt to provide the lowest incentive necessary to develop these resources. Auctions have been used in other jurisdictions to achieve lower price points for new renewable resources and may be appropriate in Vermont. An auction of this type could be used to provide support for multiple technologies by auctioning off a set capacity for each technology, with maximum prices that

¹⁰The benefits to the grid depend on the location and type of facility.

would differ by technology. In addition, “adders” could be given to projects that are located within geographically constrained areas and provide additional benefits.

In addition, since one of the benefits of in-state renewable resource development is economic development, any policy promoting such resources should attempt to avoid “boom-bust” cycles, where there is a relatively small window of time in which policies provide the necessary economic incentives for developers after which the incentives are no longer available. In order to avoid this problem, a renewable policy for in-state resources should have sufficiently stringent goals, but ensure that the policies encourage the development over time. For example, if the legislature determined that it was appropriate to provide incentives for 50 MW of small, in-state generation, an auction could be held every year for ten years and five MWs would be available each year.

A separate policy mechanism for in-state renewable generation should be focused on small-scale, distributed generation in order to address the commerce clause issue. It is also important to determine the appropriate size for small renewable generation. One option would be to continue to use the standard-offer program’s 2.2 MW size limit. It may also be appropriate to set the limit at a higher level, although the size cap should remain under a limit that could reasonably be considered distributed generation, given the circumstances of Vermont’s electric grid.

Under this new renewable distributed generation, or Class II tier, resources would be eligible if they were renewable facilities that were commissioned no earlier than January 1, 2005, had a capacity of 2.2 MW or less (although staff would like to receive comment on whether a different capacity cap would be more appropriate), and were interconnected with Vermont’s electric distribution system.

Maintain Existing Renewable Portfolio (Class III)

In order to achieve environmental goals, such as reduced air emissions, it is important to provide sufficient incentives for new renewable resources; however, without some mechanism to encourage utilities to maintain an existing renewable portfolio, the state’s overall energy portfolio could become less clean over time if utilities chose to replace existing renewable

resources with fossil-fuel-fired resources. Accordingly, a comprehensive renewable energy policy should determine which renewable resources are owned by, or under contract to, Vermont's utilities, but not eligible for the SPEED program.¹¹

Under this approach, it is not necessary to continue to support the same generation units, but to ensure that the utilities maintain an appropriate level of renewable resources in their portfolio. Utilities should not be required to contract with specific individual units as these units may become increasingly inefficient over time, or it may be less expensive for utilities to include other renewable resources in its resource mix.

Maintaining an existing portfolio could be accomplished by establishing a tier for existing renewable resources in an RPS or by simply requiring utilities to demonstrate that they hold a total percentage of renewable resources that includes new renewable, distributed generation, and existing renewable, with minimum targets for new renewable and distributed generation, and then let the utility determine how it should achieve the remainder of the portfolio requirements — which could be by maintaining existing resources or building new resources.

Under this existing renewable, or Class III tier, resources would be eligible if they were renewable facilities that were commissioned prior to January 1, 2005, and had the ability to sell into the ISO-NE market.

III.G Consideration of the manner in which Vermont would require third party certification that an energy resource is renewable. (Section 13a(b)(2)(G))

The most common manner in which an energy resource may be certified as renewable is through the use of renewable energy certificates, or RECs. In New England, RECs come in the form of New England Power Pool ("NEPOOL") Generation Information System ("GIS") Certificates. The NEPOOL GIS tracks all electricity that is generated within the region, and generates an electronic GIS Certificate for each MWh of electricity that is generated and registered with NEPOOL. Each GIS Certificate carries information about the generator, including fuel source, emissions and vintage (age of the plant), as well as eligibility information

¹¹ In other words, which resources which were commissioned prior to January 1, 2005.

for various regional programs, including the RPS programs in New England states. Prior to registering with the NEPOOL GIS, a generator that wishes to seek certification that it meets the eligibility requirements in a certain jurisdiction submits an application to the applicable regulatory authority. In the Vermont context, a generator would seek certification from the Board that it meets the definition of a renewable resource. The NEPOOL GIS incorporates renewable resource eligibility definitions for each New England state and is able to track whether a particular MWh of energy was generated by a facility that has been certified for use in a particular jurisdiction.

If the SPEED program continues, to the extent that a generating facility seeks to be certified as a SPEED resource, the Board has in place a process pursuant to Board Rule 4.305 by which it certifies qualified facilities. Typically this process takes place within the context of a Section 248 proceeding, and any SPEED certification would be included within an Order and Certificate of Public Good. However, facilities may seek SPEED certification outside of this context, in which case the applicant would need to make a showing that its facility met the definition for a SPEED resource, as defined in Section 8002(D)(5). The Board would seek stakeholder input and then make a determination.

III.H Consideration of the manner in which Vermont would require third party certification that a renewable resource has low environmental impact. (Section 13a(b)(2)(H))

One third-party certification provider that several New England states use for hydroelectric ("hydro") projects is the Low Impact Hydropower Institute ("LIHI"). LIHI is a non-profit organization that certifies hydro projects that have avoided or reduced their environmental impacts pursuant to LIHI criteria, including river flows, water quality, fish passage and protection, watershed protection, threatened and endangered species protection, cultural resource protection, recreation, and facilities recommended for removal. Any hydro project that obtains LIHI certification may seek to have this noted on their NEPOOL GIS Certificates. Because the LIHI process can be both time-consuming and expensive, a requirement that all hydro facilities obtain LIHI certification could discourage some small hydro facilities from either seeking

certification or being developed at all. Therefore, Board staff recommend that if LIHI certification were a requirement for RPS or SPEED eligibility, that this requirement not apply to small-scale run-of-river hydro facilities.

It is not apparent that an analogous third-party certification provider exists for non-hydro renewable resources. Renewable resource projects (non-hydro) that seek to be developed in Vermont are subject to the Board's jurisdiction and must receive a Certificate of Public Good ("CPG") pursuant to 30 V.S.A. § 248. In order for a renewable resource to obtain a CPG from the Board it must demonstrate that any environmental impacts will not be undue, and that on balance the benefits of the project to the state outweigh any impacts.

Each state and province has its own siting process for determining whether it is appropriate to allow renewable projects to be built. In the event that Vermont requires certification that a renewable resource has low environmental impact, for out-of-state non-hydro projects the Board could conduct an investigation into the environmental impacts with appropriate stakeholders. However, it is unclear whether the benefits of such an investigation would outweigh the additional administrative burden, and whether such an investigation, which would amount to an audit of another jurisdiction's siting practices, would be well received by the host jurisdiction.

III.I Consideration of the extent to which a Vermont RPS and, in lieu of such an RPS, revised SPEED goals and requirements would include the purchase of electric energy efficiency resources and the appropriate means of verification that the associated energy savings are achieved. (Section 13a(b)(2)(I))

Electric energy efficiency inherently shapes any electricity resource requirement because efficiency reduces total load and therefore the amount of energy that must be produced or purchased. While some states include the purchase of electric energy efficiency resources in their RPS requirements, it is important to bear in mind the purpose of a state's RPS when considering whether to include electric energy efficiency as a resource. If a state's goal is to achieve reductions in greenhouse gas emissions, then the purchase of electric energy efficiency is currently the most cost-effective way to achieve this goal. If, however, a state has other goals, including achieving a diversity of resources or incentivising the development of renewable

energy projects, markets and industries, then the purchase of electric energy efficiency resources is not likely a viable way to achieve those goals.

Vermont already has in place one of the most aggressive energy efficiency programs in the nation.¹² Pursuant to 30 V.S.A. § 209(d)(4), the Board establishes energy efficiency charges and therefore budgets in order to realize all reasonably available, cost-effective energy efficiency savings. On August 1, 2011, the Board issued an Order that established 20-year budgets for Vermont's energy efficiency utilities with the goal of achieving annual electric energy savings of 3%. In separate energy efficiency potential studies, the Department of Public Service and the Vermont Energy Investment Corporation estimated that there is significant achievable potential for energy efficiency in Vermont over the next twenty years, as much as 25% and 33%, respectively, of 2031 kWh sales. Therefore, if Vermont chooses to include the purchase of electric energy efficiency resources in an electric resource requirement, there is achievable potential beyond what the Board has determined to be reasonably available, that is, in consideration of rate and bill impacts.

Purchases of electric energy efficiency resources are considerably less costly than purchases of electricity via wholesale markets or purchases of renewable resources. In 2009 the levelized cost of Efficiency Vermont's total expenditures was approximately 3.8 cents/kWh, approximately one-quarter of the cost of comparable electric supply.¹³ By comparison, the projected levelized cost of renewable resources would be approximately 14 cents/kWh. While vastly less expensive, it is important to keep in mind that with energy efficiency expenditures, it is Vermont ratepayers that pay for the resource up front. For renewable and non-renewable electricity resources, while costs may eventually be recovered from ratepayers, it is developers and financiers that bear the risks and expenditures up front.

Under the current SPEED program, energy efficiency investments play a limited role, as the requirement, pursuant to Section 8005(d)(1), that the total amount of qualifying SPEED

¹² *Energy Efficiency Resource Standards: A Progress Report on State Experience* (American Council for an Energy-Efficient Economy, June 2011) at 9. Additionally, Vermont achieved fifth place in the ACEEE 2010 State Energy Efficiency Scorecard Ranking overall, and a first place ranking for electric utility-sponsored efficiency programs.

¹³ Efficiency Vermont 2009 Annual Report at Page ii.

resources equals at least 5% of the 2005 total statewide electric retail sales will not be affected by energy efficiency investments made after 2005. However, the current SPEED goal of assuring that 20% of total statewide electric retail sales before July 1, 2017 be generated by SPEED resources, under Section 8005(d)(2), will and has been impacted by energy efficiency investments to date. To the extent that the state as a whole or an individual electric distribution utility seeks to meet this goal, such an undertaking is made all the more achievable by incremental energy efficiency investments.

The Vermont Department of Public Service currently verifies the energy and capacity savings claimed by Vermont's energy efficiency programs. In the event that Vermont includes purchase of electric energy efficiency resources as part of an RPS or a revised SPEED program, the DPS would be a logical and capable agency to verify that the requisite energy savings are achieved.

III.J Consideration of whether 30 V.S.A. § 8005(d)(3) (resources that count toward SPEED goals) should be revised with respect to the description of those SPEED resources that will count toward the 2017 SPEED goal described in subdivision (a)(5) of this section. (Section 13a(b)(2)(J))

Section 8005(d)(3) states:

For the purposes of the determination to be made under this subsection, electricity produced at all facilities owned by or under long-term contract to Vermont retail electricity providers, whether it is generated inside or outside Vermont, that is new renewable energy shall be counted in the calculations under subdivisions (1) and (2) of this subsection.

Based upon the language of this section, at least three questions could be raised:

(1) whether the renewable energy goal should be met through contracts or RECs, (2) whether out-of-state projects should be allowed to count toward the goal, or (3) whether new renewable should be distinguished from existing renewable energy.

If the legislature decides to retain the SPEED program, including the 2017 voluntary SPEED goal, the primary question appears to be whether out-of-state projects should count toward the goal. Given the commerce clause issues raised in Section III.D, above, Board staff

recommend that, if the SPEED program is retained, contracts with resources located outside of Vermont should count toward the goal.

IV. Proposal for a Renewable Portfolio Standard

As stated previously, Board staff believe that Vermont should adopt a comprehensive renewable energy policy that includes the following three mechanisms: (1) a requirement that Vermont utilities obtain a certain percentage of the most cost-effective new renewable energy, (2) a requirement that Vermont utilities obtain a certain percentage of small-scale distributed generation, and (3) a requirement that Vermont utilities maintain the existing percentage of renewable energy.

Board staff recommend that Vermont adopt an RPS with a 75% renewable energy requirement. Within that 75% requirement, 30% would be met through new least-cost renewable energy and 5% would be met through new distributed generation, including the energy developed under the net metering program and the proposed revised standard-offer program, described below. In order to demonstrate that new renewable generation has been developed, RECs would be retired annually. The remaining 40% of the overall 75% requirement would not require the development of new generation, but would instead allow utilities flexibility in meeting this requirement and could be met either through demonstration of contracts with an existing renewable resource or through retirement of RECs from new renewable resources. It is important to provide this flexibility because utilities should not be required to maintain the exact resources which they own or have contracts with at this time. If utilities were required to maintain existing plants, it could increase the overall cost of the program because it may be uneconomic to retrofit or maintain specific plants, or new renewable power may be more lower cost than maintaining or retrofitting an existing plant.

New Renewable Energy

Due to the fact that it is unclear to what extent the SPEED program results in the development of new renewable energy staff recommend that an RPS be used to provide the necessary incentives for new renewable energy. Under this approach, utilities would be required

to retire RECs each year in proportion to the amount of renewable energy required in that year. For example, if Vermont established a requirement that each utility retire RECs equal to 20% of its load by 2032, and an RPS became effective on January 1, 2013, a utility would be required to retire RECs equal to one percent of its load at the end of 2013, two percent by the end of 2014, etc.

The location of the generation unit would not matter for purposes of the program, as the primary goal of this requirement is to provide incentives for the development of the most cost-effective renewable energy.

Staff recommend that 30% of Vermont's overall load be met through new renewable energy by 2032, and that utilities be required to retire RECs starting in 2013. The definition of new renewable resource would be any renewable resource that comes into service after December 31, 2004. Because the annual requirement would be ramped up over time, the amount of RECs that would need to be retired in 2013 would be equal to less than two percent of the total statewide load in 2013.

One issue that needs additional consideration is the mechanism for ensuring compliance. Staff recommend that the RPS requirements be applied to individual utilities, however, we also recognize that this may prove to be difficult for some of the state's smaller utilities. Accordingly, staff request comment on whether utilities should be allowed to decide to work together to meet the requirements; for example should the municipal utilities be considered to be one utility for purposes of determining compliance, if those utilities so choose? In such a case, the penalties associated with non-compliance, discussed below, would be applied to those utilities collectively.

Staff recommend that an RPS include a monetary penalty for failure to meet the renewable requirement and that this penalty consist of an alternative compliance payment consistent with that adopted by other New England states. The amount of the penalty and the recipient of the funds would be determined by the Board with input from interested parties.

In-State New Renewable Energy

Staff recommend that 15% of Vermont's overall electric portfolio be met with new small-scale renewable distributed generation by 2032. Under this proposal, any net metering developed

after December 31, 2004, and the energy derived from the existing standard-offer program would count towards this requirement.

In order to acquire additional distributed generation beyond the net metering program and the resources in the existing standard-offer program, staff propose that the standard-offer program be revised to allow for the use of an auction to determine prices for specific projects. Under this modified standard-offer program, a state-wide entity would continue to enter into contracts with renewable generation developers and would distribute the power and costs from the program to utilities on a pro rata basis. The primary difference would be the pricing mechanism; under the current standard-offer program, the Board sets a price for each technology that is designed to cover the costs of developing and maintaining the project while also providing a reasonable rate of return for the plant owner. The problem with this price model is that the costs of developing and maintaining a project are largely site-specific, yet project owners utilizing the same technology will receive the same price, regardless of the differences in developing and maintaining a project. In order to achieve greater price discovery, Board staff recommend that an auction be utilized.

Under an auction approach, the Board would establish, for each renewable technology, a ceiling price per kWh,¹⁴ above which it would not accept bids and would also determine the maximum amount of renewable resources that could be accepted. The DPS would then conduct an auction on a yearly basis, and the lowest bidders would receive a power contract. There could be incentives for facilities located in constrained areas, either through an established adder to the kWh price, or by providing preference to such facilities that bid, provided the specific facility's bid is within a certain percentage of the winning bidder. Because only a small amount of resources would be put out to bid each year, there should be sufficient competition to induce developers to bid the lowest price at which they could construct and operate their particular projects. In addition, it would be important to have mechanisms in place to ensure that the developer does not underbid to the extent that the project would not be built, such a mechanism

¹⁴The ceiling price should be set by determining the avoided cost of each technology in order to be consistent with rulings by the Federal Energy Regulatory Commission.

could include a contractual requirement that the developer pay a significant penalty if the project is not constructed within a certain period of time.

Board staff's RPS proposal has been designed to promote Vermont's renewable energy goals, as codified in 30 V.S.A. § 8001, while balancing the competing forces of compliance cost and the development of in-state renewable energy industries. Generally, Section 8001 calls for the balance of benefits, costs and rates associated with renewable energy, the support of renewable energy industries in Vermont, the promotion of affordable, long-term, stably priced renewable energy contracts, and the protection of air and water quality by means of renewable energy programs.

In order to balance the economic benefits and costs of renewable energy in Vermont, Board staff have recommended an RPS that allows utilities to seek out the least expensive new renewables available in the region to comply with the bulk of the new requirement. However, because large regional renewable projects in excess of 200 MW are currently eligible resources, it is unlikely that any incremental new renewable resources would be developed in Vermont (or elsewhere) as a result of Vermont's RPS requirement. Therefore, in order to harness some of the economic benefits of renewable resources, and to support Vermont-based renewable energy industries and provide the benefits of distributed generation, it is necessary to mandate that a certain portion of the requirement come from in-state resources. Board staff recommend that a reverse-auction type pricing mechanism be utilized for this in-state procurement, as this mechanism will most likely result in lower costs and therefore rate impacts, as compared to the current prescriptive standard-offer program pricing mechanism. Table 7 of the CESA/SEA report shows that, for a 75% RPS, with 20% all new renewables coming from in-state resources, the effect of an auction-based pricing mechanism is a reduction in costs of approximately \$89 million over 30 years.

In order to incent Vermont's retail electricity providers to enter into long-term, stably priced contracts, Board staff are recommending an RPS that requires Vermont utilities to maintain their existing levels of renewable energy resources, with the option to meet this requirement with existing (pre-12/31/04) resources. It is Board staff's belief that maintaining

these existing levels will be most readily achieved through long-term, stably priced contracts with these resources.

In order to protect Vermont's air and water quality, and to contribute to reductions in global climate change, Board staff are recommending an RPS rather than a revised SPEED program, with the chief difference being that the RPS requires utilities to retire RECs. The retirement of RECs by Vermont utilities will cause incremental new renewable resources to be built in the region. Table 3 of the CESA/SEA report indicates that an RPS program in which RECs are retired will reduce carbon dioxide emissions in all scenarios, whereas in the 75% and 100% SPEED scenarios, carbon dioxide emissions in the region are expected to increase.

V. Proposal for a Revised SPEED Program

Option 1

Board staff recommend that Vermont adopt a comprehensive renewable program that addresses each of the considerations set forth in the RPS proposal, above. Such a proposal would include a modified standard-offer program, consistent with the description set forth in Section IV, above, and impose a requirement that utilities maintain the existing proportion of renewable energy, as described above. Board staff do not believe that the existing SPEED program provides an appropriate mechanism for encouraging new renewable energy, because the energy purchased from the project counts toward Vermont's renewable requirement and the RECs associated with that energy also count toward another state's renewable energy requirement. Accordingly, it is unclear whether the SPEED program results in new renewable energy in the region. The SPEED program does provide financial incentives for renewable energy developers because the program requires utilities to enter into contracts with developers; the existence of such contracts can be helpful in obtaining financing. If the goal of a renewable energy requirement is to promote a certain amount of new renewable energy, Vermont should require utilities to enter into long-term contracts and retire the associated RECs.

Option 2

Board staff recommend that a revised SPEED program consist of a modified standard-offer program, consistent with the description set forth in Section IV, above, and impose a requirement that utilities maintain the existing proportion of renewable energy, as described above. Given that it is unclear whether SPEED results in development of new renewable generation, it is unclear whether the administrative costs of the SPEED program sufficiently outweigh the benefits of the program. A voluntary goal could be established that would provide utilities discretion to enter into higher-priced contracts with renewable energy resources and would be a consideration for the regulators to take into account in determining whether such contracts are reasonable.